2.1.7. CO STANDARDS

The primary CMDL CO standards were prepared gravimetrically and then propagated to a set of working standards [*Novelli et al.*, 1991]. These working standards were also calibrated against three CO-in-air standards prepared by the CMDL Nitrous Oxide and Halocarbon Division in March 1992 using gravimetric methods. The differences in CO values assigned to the working standards using different reference gases were less than 1% [*Novelli et al.*, 1994*a*].

The CMDL CO standards were compared with standards used by the NASA-Langley, Differential Absorption CO Measurement Group (Hampton, Virginia) and the Fraunhofer Institute (IFU) (Garmisch-Partenkirchen, Germany). The inter-calibration of eight standards having CO levels between 100 and 165 ppb indicated agreement between CMDL and NASA of better than 2%. Calibration of six standards by CMDL and IFU having CO mixing ratios between 50 and 200 ppb indicated agreement to better than 4%. The details of the intercalibrations and their results are presented in *Novelli et al.* [1994*a*].